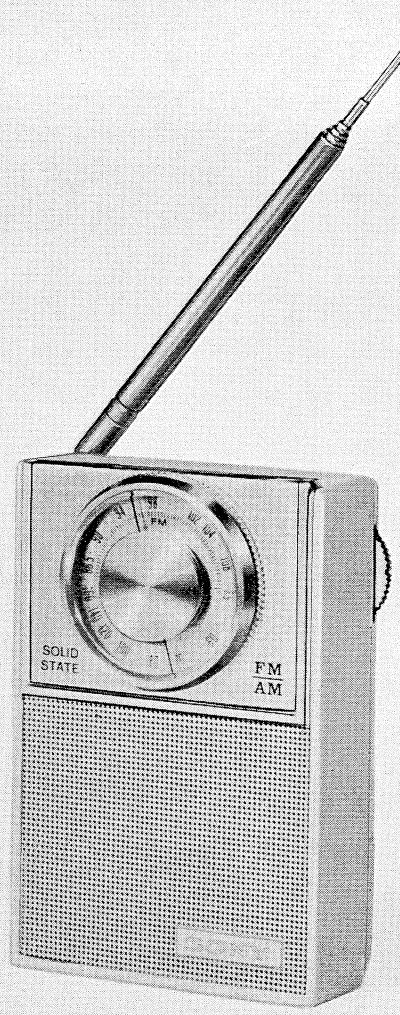
2F-23W



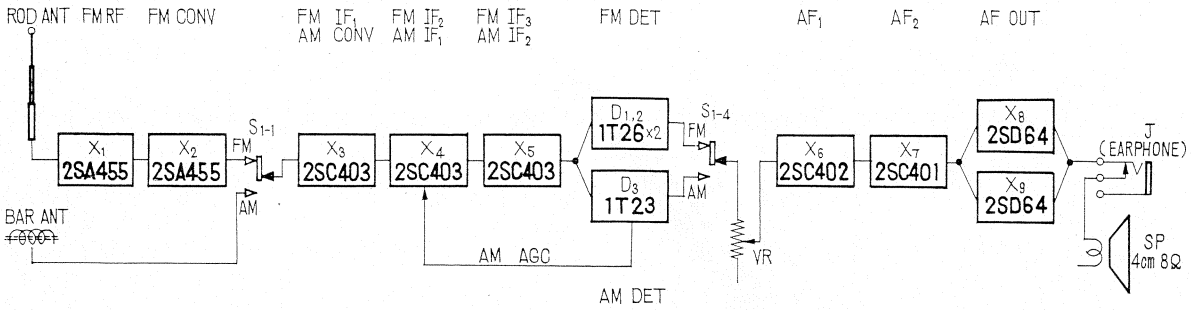
Specifications

Circuit :	9 Transistor Superheterodyne
Frequency Coverage :	FM 86.5—108 Mc (3.53—2.78 m)
	MW 530—1,605 Kc (566—187 m)
Intermediate Frequency :	FM 10.7 Mc MW 455 Kc
Antenna System :	FM Built-in Telescopic Antenna
	MW Built-in Ferrite Bar Antenna
Maximum Sensitivity :	FM 35 dB (with S/N of more than 42 dB)
(at 10 mW Output)	MW 47 dB
Selectivity :	MW 16 dB at 10 Kc off resonance, at 1,400 Kc
Output Power :	115 mW (undistorted)
	200 mW (maximum)
Current Drain :	10 mA (MW), 14 mA (FM) at zero signal, 75 mA at 115 mW output
Power Source :	3 " Mercury Cell " Malory RM-640, Eveready E-640
	or equivalent, 3.9 V in total
Speaker :	40 mm (1-9/16″), PM dynamic, 8 Ω
Dimensions :	55 (W) × 82 (H) × 25 (D) mm
	(2-1/4 × 3-1/4 × 1″)
Weight :	150 g. (5.3 ozs.)

SONY®

SERVICING GUIDE

Block Diagram



Removal of Circuit Board

(1) Remove the one Screw securing the Back Cover.

(2) Open the Back Cover gently. Take care not to cut the Telescopic Antenna Lead.

(3) Remove the Battery Holder together with the three Batteries.

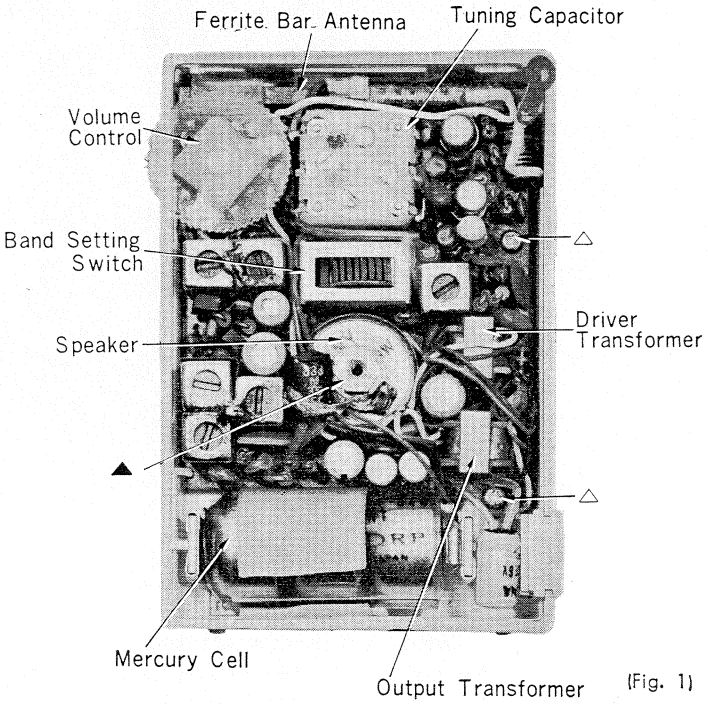
(4) Remove the Tuning Knob by pulling straight out.

(5) Remove the one Nut (▲ in Fig. 1) on the Speaker.

(6) Remove the two Screws (△ in Fig. 1) securing the Circuit Board to the Cabinet.

(7) Remove the Battery Positive Contact Plate and the Earphone Jack by pulling straight out.

(8) Lift up the Circut Board taking care not to cut the lead wires.



(Fig. 1)

Frequency Coverage and Tracking Adjustment

a) Frequency Coverage

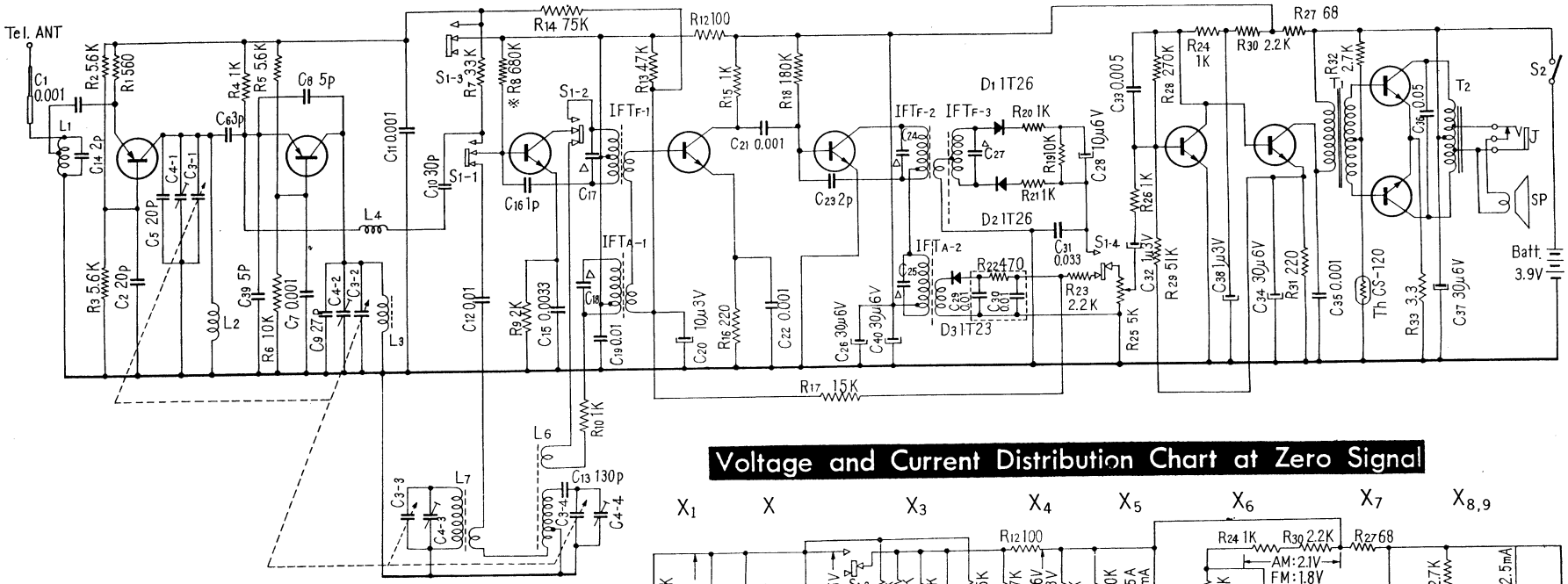
	Lower Limit	Adjust	Upper Limit	Adjust
MW	520 kc	Core of MW OSC Coil (L_6)	1,680 kc	MW OSC Trimmer (C_{4-4})
FM	85.5 Mc	Core of FM OSC Coil (L_3)	109.5 Mc	FM OSC Trimmer (C_{4-2})

b) Tracking Adjustment

	Lower Checking Point	Adjust	Upper Checking Point	Adjust
MW	620 kc	Position of MW ANT Coil (L_7)	1,400 kc	MW ANT Trimmer (C_{4-3})
FM	85.5 Mc	Core of FM RF Coil (L_2)	109.5 Mc	FM RF Trimmer (C_{4-1})

Schematic Diagram

X_1 2SA455 X_2 2SA455 X_3 2SC403 X_4 2SC403 X_5 2SC403 X_6 2SC402 X_7 2SC401 $X_{8,9}$ 2SD64



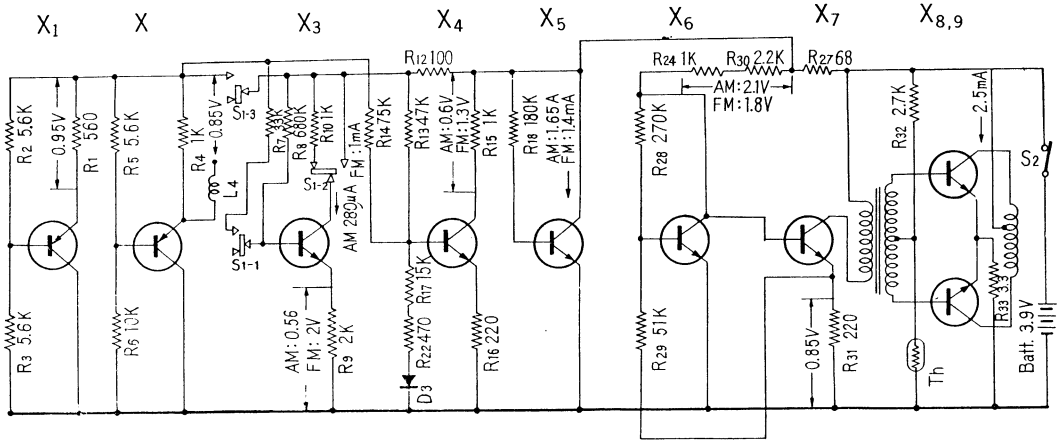
Note :

※ To be adjusted

Capacitors marked with △ are built in relative IF Transformers.

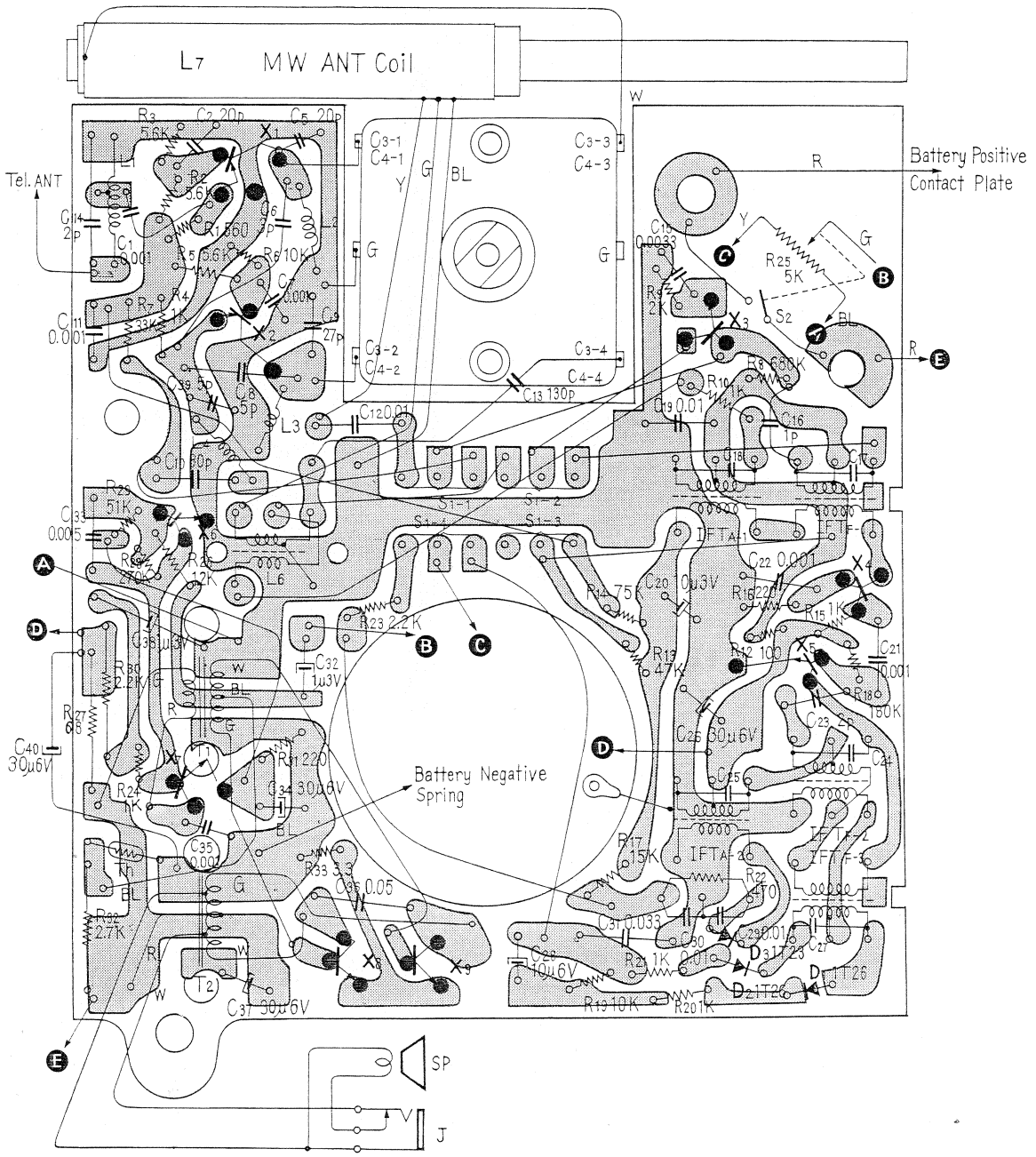
Position of the Band Switch in the Diagram shows AM side.

Voltage and Current Distribution Chart at Zero Signal



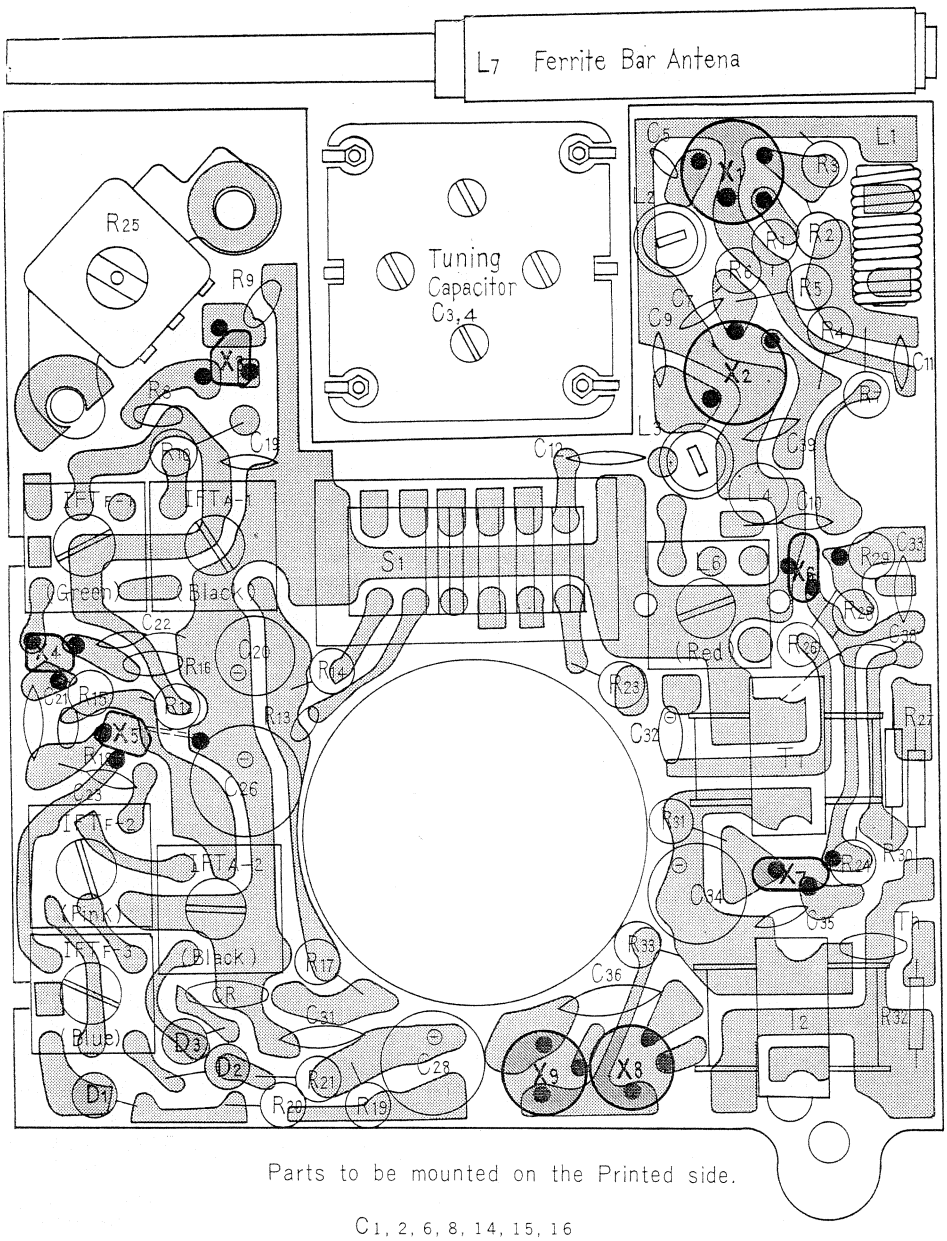
Mounting Diagram

—Printed Side—



Mounting Diagram

—Parts Side—



Parts to be mounted on the Printed side.

C1, 2, 6, 8, 14, 15, 16

Electrical Parts List

Part No.	Symbol	Description
1-501-067-11	Tel. ANT	Telescopic Antenna
1-401-235-11	L_1	FM, Antenna Coil
1-425-208-12	L_2	FM, RF Coil
1-405-149-12	L_3	FM, Oscillator Coil
1-407-082-11	L_4	Micro Inductor (10μH)
	L_5	—deleted—
1-405-144-11	L_6	AM, Oscillator Coil
1-401-236-11	L_7	AM, Ferrite Bar Antenna
1-403-243-11	IFT_{F-1}	FM, IF Transformer
-245-11	IFT_{F-2}	FM, Discriminator (Primary)
-245-21	IFT_{F-3}	// (Secondary)
-110-11	IFT_{A-1}	AM, IF Transformer
-110-11	IFT_{A-2}	//
1-423-094-11	T_1	Driver Transformer
1-427-164-11	T_2	Output Transformer
1-513-248-11	S_1	Band Setting Switch
	S_2	Power Switch (Built in Volume Control)
1-502-130-11	SP	Speaker, 8Ω
1-507-160-11	J	Earphone Jack
1-528-020-11	Batt.	Mercury Battery
1-231-016-11	CR	Encapsulated Component
	X_1	Transistor 2SA45
	X_2	// 2SA45
	X_3	// 2SC40
	X_4	// 2SC40
	X_5	// 2SC40
	X_6	// 2SC40
	X_7	// 2SC40
	X_8	// 2SD64
	X_9	// 2SD64
	D_1	Diode 1T26
	D_2	// 1T26
	D_3	// 1T23
	Th	Thermistor CS-120
		Resistor
1-201-132-11	R_1	560Ω 1/10W Composition
-106-11	R_2	5.6KΩ // //
-106-11	R_3	5.6KΩ // //
-163-11	R_4	1KΩ // //
-106-11	R_5	5.6KΩ // //
-145-11	R_6	10KΩ // //
-327-11	R_7	33KΩ 1/8W //
1-208-101-11	*R_8	680KΩ 1/10W Ceramic
-040-11	R_9	2KΩ // //
1-201-163-11	R_{10}	1KΩ 1/10W Composition
	R_{11}	—deleted—
1-201-679-11	R_{12}	100Ω 1/8W Composition
1-208-073-11	R_{13}	47KΩ 1/10W Ceramic
1-201-822-11	R_{14}	75KΩ 1/8W Composition
-163-11	R_{15}	1KΩ 1/10W //
1-208-017-11	R_{16}	220Ω // Ceramic
1-201-201-11	R_{17}	15KΩ // Composition
1-208-087-11	R_{18}	180KΩ 1/10W Ceramic
1-201-145-11	R_{19}	10KΩ 1/8W Composition
1-201-163-11	R_{20}	1KΩ 1/10W Composition
-163-11	R_{21}	1KΩ // //
	R_{22}	470Ω (Built in Encapsulated Component)
1-201-136-11	R_{23}	2.2KΩ 1/10W Composition
-163-11	R_{24}	1KΩ // //
1-221-585-11	R_{25}	5KΩ Volume Control
1-201-163-11	R_{26}	1KΩ 1/10W Composition
-386-11	R_{27}	68Ω // //
-846-11	R_{28}	270KΩ 1/8W //
-153-11	R_{29}	51KΩ 1/10W //
-136-11	R_{30}	2.2KΩ // //
-130-11	R_{31}	220Ω // //
-819-11	R_{32}	2.7KΩ 1/8W //
-820-11	R_{33}	3.3Ω // //
		Capacitor
1-101-125-15	C_1	0.001μF Ceramic
-063-11	C_2	20PF //
1-151-113-11	$C_{3-1\sim4}$	Tuning Capacitor, 4 gang
	$C_{4-1\sim4}$	Trimmer Capacitor, 4 unit
1-101-063-11	C_5	20PF Ceramic
-011-11	C_6	3PF //
-125-15	C_7	0.001μF //
-012-11	C_8	5PF //
-856-11	C_9	27PF //
-120-11	C_{10}	30PF //
-125-11	C_{11}	0.001μF //
-072-14	C_{12}	0.01μF //
1-103-654-11	C_{13}	130PF Styrol
1-101-010-11	C_{14}	2PF Ceramic
1-105-827-12	C_{15}	0.0033μF Mylar
1-101-009-11	C_{16}	1PF Ceramic
	C_{17}	(Built in IFT_{F-1})
	C_{18}	(Built in IFT_{A-1})
1-101-072-14	C_{19}	0.01μF Ceramic
1-121-103-05	C_{20}	10μF 3V Electrolytic
1-101-125-15	C_{21}	0.001μF Ceramic
-125-15	C_{22}	0.001μF //
-010-11	C_{23}	2PF //
	C_{24}	(Built in IFT_{F-2})
	C_{25}	(Built in IFT_{A-2})
1-121-102-11	C_{26}	30μF 6V Electrolytic
	C_{27}	(Built in IFT_{F-3})
1-121-264-11	C_{28}	10μF 6V Electrolytic
	C_{29}	0.01μF (Built in Encapsulated Component)
	C_{30}	0.01μF (Built in Encapsulated Component)
1-105-354-12	C_{31}	0.033μF Mylar
1-127-053-11	C_{32}	1μF 3V Electrolytic
1-101-075-14	C_{33}	0.005μF Ceramic
1-121-102-11	C_{34}	30μF 6V Electrolytic
1-101-125-15	C_{35}	0.001μF Ceramic
-796-11	C_{36}	0.05μF //
1-121-102-11	C_{37}	30μF 6V Electrolytic
1-127-053-11	C_{38}	1μF 3V //
1-101-012-11	C_{39}	5PF Ceramic
1-121-102-11	C_{40}	30μF 6V Electrolytic

* To be adjusted

SONY CORPORATION